

catch small frogs, which were plentiful in the paddyfield where the rice was being harvested. The frog was caught in the bill, carried to the overhead electric wires, battered to death and swallowed piece by piece. One frog obtained in the field has been identified as *Rana limnocharis*.

I do not know if such food habits have been recorded for the baya.

NATURAL HISTORY SECTION,  
PRINCE OF WALES MUSEUM,  
BOMBAY - 400 001,  
June 27, 1973.

N. J. GEORGE

### 11. SNAKE BITE CASE HISTORIES

- (1) May 24th, 1971. Medavakkam, near Madras.  
Girl, 18, suspected krait bite, fatal. Sleeping on a mat on the floor of the hut when bitten on leg. Snake was killed and described as being long, thin and black. Girl was given "country" remedies but died before daybreak.
- (2) August 25th, 1971. Tambaram, near Madras.  
Gurkha, Nepali night watchman, about 40 years old, suspected krait or cobra bite. At 7 a.m. men came rushing to me to say that this man had been bitten and died but could I somehow help anyway!? (This has happened several times). Watchman stepped on and was bitten at 1 a.m. by an unknown, "large" snake. His wife and he then sat around. By 3 a.m. the man succumbed. No help was sought, till morning.
- (3) January, 1972. Boy, 10 years, died possibly as a result of complications from bite of *Echis carinatus*. (see case 9, *Echis* bites).
- (4) May 26th, 1972. Madavakkam, near Madras. Friday morning—rainy, windy. 8 a.m. two men arrive with news of snake bite at Medavakkam (4 miles away on Velachery Rd.). I reached the hut 8.15 a.m. A crowd of people, mostly women were crying and yelling and beating themselves on the breast in anguish. The young man, of about 22, lay flat on back, arms folded, flower petals on eyelids, only light in the room was an oil lamp. No pupil response, no pulse, heartbeat or breath. The left lower leg quite swollen, with two obvious punctures below ankle bone. An Irla (tribal snake catcher) was digging around the hut trying to find the snake which was supposed to have been called cobra by the bitten man—he saw it crawl away in the moonlight. Possibly krait. It was as likely or more so that it was a krait since it is a common nocturnal prowler and seems less wary than a cobra; these "bites while

sleeping" are common. The sleeping man may have felt the snake brushing against him and in his sleep pressed the snake with his foot (perhaps rolled over it). He woke up, saw the snake which seemed to go into a hole in the hut. Many people woke and carried him to a village 2 miles away for "country medicine", a plaster of green paste supposed to contain the remedy. He came back and sat and was slowly paralyzed to death by the neurotoxins in the venom. Had trouble breathing at 6 a.m. and collapsed at 7 a.m. Just 4 miles away is a dispensary and my home; it is well known that we have antivenom serum. We treated or supplied serum for about 2 dozen bites in the last year (mostly *Echis*). If the use of antivenom was publicized, there would be very few fatal snakebites in India and the public attitude towards snakes could gradually become realistically tolerant. At present a supernatural fear of snakes prevails and no wonder when the venom can kill so surely in spite of all the "remedies" tried out.

(5) 17th August, 1972. Madras City.

Lady, 58 years, suspected krait bite, fatal. At 6 a.m. went into bathroom to take a bath, stepped on 'small black snake about 2 feet'. Local symptoms absent, small single wound, little bleeding, slight oozing. In the first 6 hours the blood pressure rose, complained of trouble in swallowing, breathing, 6 hours after bite she went into a coma. 2 vials antivenin given, supportive therapy, anti-histamines, blood pressure drugs, haemodialysis. Lady succumbed without coming out of coma next day at 11-30 a.m. (about 36 hours later).

(6) June 2, 1972—Chinnappa—18 year old Irula tribal snake-catcher of Sotalapakkam village near Tambaram, Madras 44, cobra bite, recovered.

The day after a heavy shower Chinnappa was hunting snakes with his uncle. They were hunting in separate farm areas near rocky hills about 18 miles from Madras City. Chinnappa, searching carefully for tracks made out the fresh track of a large snake (he thought cobra) going into a rat hole. Rat holes are everywhere on the earthen and rock mounds and bunds near paddy fields. He dug with a small crow bar and poked with a thin stick down the various branches of the hole. In one the stick moved. He dug forward carefully; he was only about 2 feet deep into the mound when he gradually uncovered a very fine healthy cobra just under 5 feet long. Quickly he pressed the flat side of the little crowbar on the snake's head and grabbed a secure hold on the neck with his left hand. He had a small cloth shopping bag with handles to tie the open end shut. Then he did an odd thing for an experienced snake catcher, "not thinking for a moment": holding the bag open with thumb and forefinger encircled, he pushed the cobra's

head into the resultant hole. The cobra partly entered the bag then very quickly turned and bit Chinnappa through the cloth on the fleshy part of the left hand below the little finger with both fangs. He immediately threw the snake down (which was caught in the same mound the next day!) and clutched his left wrist. He walked a little and called to his uncle about half a mile away. His uncle tied a piece of cloth tightly on the upper arm, the hand had already begun swelling. 3½ hours later (4 p.m.) he had walked and ridden on the back of a cycle the 6 or 7 miles to Madras Snake Park. The swelling was halfway up the arm and he complained of much burning pain throughout the arm below the tourniquet. Antivenin was ready and we removed the tourniquet to relieve the pressure on his arm. Until 8 p.m. there was little change except the steadily increasing swelling now above the elbow. At 8.30 p.m. Chinnappa started having the symptoms of drooping eyelids and puffed lips called ptosis, the first sign of systemic neurotoxic poisoning. We immediately drove him to the clinic nearby where the lab tech, supervised by Dr. Sarangapani gave 10cc Haffkine polyvalent antivenin with 5 mg cortisone IV. Shortly afterwards, Chinnappa vomited but looked more lively. We waited at the clinic for an hour and then returned home where Chinnappa, with his old mother watching over started a fitful night. His arm was less painful, most of the pain was at the site of the bite. At about 11 p.m. he started shivering violently so he was covered with blankets and rubbed by mother and cousin. The shivering went away in 20 minutes (maybe allergic reaction to antivenom). Gave two aspirins and he slept well till morning. His arm swelling reached a painful peak and then subsided except for the hand within 12 hours. A ten day supply of multivitamins given. Twelve days later hand is still very swollen, site of bite appears as some skin will slough. Advised daily dressing changes. Thirty days later, bit of skin loss took place but except for stiffness hand and arm are OK, advised exercises for hand.

#### Bites of *Echis carinatus*

1) Panvel, near Bombay, October, 1967. An adult male Adivasi aged about 35 was bitten in the evening just behind big toe on top of right foot by an *Echis* about 10 inches long. Came next day 2 p.m. for treatment. Dorsum of foot edemat, slight discoloration of site of bite. Blood pressure 100/60, complains of pain, didn't sleep. Slight bleeding from gums. Treated with tetanus toxoid and antibiotics. Next evening (48 hours post bite) gum-bleeding stopped, foot seems more swollen, complains of pain and discomfort. Aspirin and sulfa tablets given. Adivasi plastered jungle medicine that looks like cow dung all over bitten foot. Six days later Iodex applied to bitten limb and patient said swelling went down soon after application. Eight days later foot appears normal, no necrosis or swelling.

2) Deogad, Ratnagiri District, Maharashtra, September, 1969, 7 a.m. N. Gate, a male worker, aged 30 walking to work through a field near Deogad town, stepped on a 300 mm long echis and was bitten on right lateral side of ankle joint on the right foot. The victim walked two miles to the dispensary with a friend's help. Snake was killed and brought in at 8.30 a.m. When the patient reached the doctor there was swelling and tenderness around the site of bite; dark bluish discoloration about 2 inches in diameter. Shooting pain in calf muscle, adenitis behind knee and in lower inguinal glands. Swelling of ankle and foot increasing.

9 a.m. as patient did not exhibit any alarming or systematic symptoms, 10 cc of Haffkine serum was injected intramuscularly. Procaine-pencillin injected, aspirin given and patient sent home.

Next day, 8 a.m. patient reported to doctor that he had recovered; only slight signs remained at the site of bite.

3) Jamsande, Ratnagiri Dist., 15 January, 1963, a.m. S. S. Bhadsabe, a male worker age 25 years was moving stones and got a toe bite from an echis. Within one hour he came to dispensary with severe local bite symptoms. Urine cloudy and bloody. 15 cc Haffkine antivenom given intravenously which provoked immediate allergic reaction including: urticaria, severe itching, heat, headache, asthmatic breathing. Administered .5 cc adrenalin and treated patient for shock for half an hour. Additional 5 ml antivenom given. Calcium lactate given. Next day local symptoms diminished, urine trace blood; calcium gluconate and calcium lactate given. Third day patient seemed completely recovered, calcium lactate given.

4) Deogad, Ratnagiri Dist., 27 January, 1965 a.m. A. G. Kawale, a 1½ year old male child was playing in the garden and picked up an echis which he mistook for a rope. He was bitten on the right palm and there was swelling at site of bite and whole of palm within half an hour. The child's crying attracted attention and he was brought to the doctor within 45 minutes after the bite. 10 cc Haffkine antivenom injected intramuscularly in the buttocks one hour after bite. 20 grains calcium gluconate given. Local symptoms subsided by evening of the same day, recovery complete.

5) Deogad, Ratnagiri Dist., August, 1964 a.m. Female age 65 was bitten on the instep of left foot by an echis and came to dispensary within one hour. 10 cc Haffkin antivenom was given intramuscularly as local symptoms of swelling and pain were apparent. After five hours there was bleeding from gums and evidence of blood in stools. An additional 10 cc serum was injected intravenously. The patient had moderate allergic reaction which was treated and patient recovered but weak after 6 hours. Second day recovery complete.



6) Sembakkam, near Madras, October 20, 1970. A male child about 10 years, was bitten the evening before by an echis on the big toe while going out to the bathroom. When he came at 10 a.m. foot was moderately swollen and slight swelling of the lower leg. Little pain, weakness and discomfort evident. Taken to a nearby doctor where he was observed for a few hours treated locally and sent home with instructions to parents to look for bleeding gums etc. Swelling subsided within 2 days and there were no after effects.

7) Sembakkam, near Madras, November 17, 1970. A woman about 40 years old was bitten by an echis while cutting branches from a low thorn tree. Finger was tied tightly with a string and was tautly swollen. I released the string. The patient exhibited great pain and anxiety. Took her to doctor where she was kept for observation that afternoon then sent home. In two days there was a little tissue loss and dressings were applied. Swelling and sloughing persisted a week.

8) Tambaram, near Madras, December 15, 1970. An Irula snake-catcher, was bitten by an echis on the right thumb while catching it. Didn't suffer on the first day. Second day had swollen hand and for 2 days had difficulty using hand. Untreated and no more symptoms.

9) Tambaram, near Madras, November 25, 1970. Natesan, an Irula snake catcher about 40 bitten on base of left index finger while catching. Swelling slight, stiff hand for two days, pain only for first hour or so. No other symptoms, complete recovery without treatment.

10) Sembakkam, near Madras, September, 1971. Boy about 10 years bitten on foot in evening near home by echis. Two hours later when he arrived at my house leg was greatly swollen and boy very frightened, near collapse. No evidence of systemic poisoning. Gave local treatment, observed for a few hours then told them to go home unless something like bleeding gums occurred. One month later the father came to say that the swelling still hadn't gone down though they had seen doctors. In January, four months later the boy died, cause unknown but the father feels it's the same snake bite. (?)

11) Sembakkam, near Madras, July, 1971. Adult male 35 years bitten by echis on right foot at night while walking on road. Arrived at our house 8 a.m. foot and lower leg greatly swollen and bleeding profusely from gums. Otherwise he was feeling all right and normal. I gave him 2 vials of serum to take to the nearby doctor and asked him to check with me later. Few days later he came back with still swollen leg and asked what to do. I advised soaking in salts and seeing a doctor. In April 1972, 8 months later, this man came obviously in great discomfort with his foot still swollen. It seems that the lymphatic and general circulatory congestion so common in viper bites can persist for a long time and cause permanent defects.

